A CONTRIBUTION TO CEREBRAL SURGERY.

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ALL CASES, which throw light upon the diagnosis of intra-cranial disease, are at present of great interest to the surgeon, for we stand ready, by the resources of our art, to save the patient who lies before us dying from the effects of pressure on his brain; but as we prepare to interfere, we stop, checked by the doubt which besets us, of the exact position of the enemy, whom we are able to dislodge could we but be certain where to find him. Soon—very soon, I hope—we shall be able to know the nature, and position of disease inside the cranium, as we do of that within the thorax, but just now all observations bearing on these two points, are invaluable. Hence I contribute two cases, one correctly diagnosed, and recovering, without operation, the other, diagnosed and the pressure removed by operation, giving immediate relief, and present recovery, but subsequently ending in death, resulting from inflammatory disorganization of the brain.

CASE I.—*Suppurative otitis, followed by cerebral symptoms, very severe pain, rigors, rapid changes of temperature, etc.; consultation, operation decided upon, if rigors returned, meantime treatment by mercury; patient recovered, without operation.*

Thomas Wallace, a watchmaker, 45 years of age, was admitted upon the 14th of January, 1888, to the Adelaide Hospital under my care. Mr., now Dr. Bell, acting as my dresser, took careful notes of the case, from which I extract the following particulars. He enjoyed good health until November, 1887; upon the 28th of that month he experienced a violent pain in his left ear, which continued for 3 days, when a dis-

charge of pus came from the ear and the pain at the same time was relieved. This discharge continued for 3 weeks, during which time, and ever since, he has suffered from what he supposes to be neuralgia, the original deep agonizing pain in the ear which preceded the bursting of the abscess, having disappeared.

This neuralgic pain affects the left side of his head, only; it begins at the occipital region, and seems to radiate across the side of his head to the frontal region; it as a rule becomes very violent about 3 to 5 o'clock in the afternoon, from which time it continues with unabated severity until 8 or 9 o'clock A. M., when patient falls asleep, and from this the pain abates until the next afternoon. He has remained in bed feeling unable to rise, or to do any work at his trade. Upon the 30th of November, before the abscess in his ear burst, he had a severe rigor, and this has recurred twice since that time, the last being on the day he was admitted to Hospital. He has no appetite, his tongue is loaded with a creamy fur, he has vomited twice during the course of this illness but felt no relief from this vomiting. Bowels somewhat confined. Ordered: Calomel gr. v., in powder, with a little sugar.

January 18th, he was ordered a mixture containing the bromides of sodium and potassium, the pains in his head continuing. A very careful examination was made of the left ear, from which there was now no discharge of any kind. The membrane was seen to be opaque and thickened.

On the 21st he had a very severe rigor, lasting 20 minutes, during which he not only shook the bed, but seemed as if he must shake himself out of it. His lips became livid and his extremities were very cold. The temperature had up to this varied very much, being sometimes 102° at night, and 99° in the morning. On this day after the rigor had passed off, the temperature rose to 104.6°.

Next day, 22nd., a consultation of all my colleagues, both physicians and surgeons, was held, and we unanimously came to the following conclusions. 1st. That the symptoms were due to inflammation of a portion of the temporo-sphenoidal lobe of the left side of the brain, due to extension of disease from the middle ear, of that side. 2nd. That the symptoms of

pressure were not sufficient to convince us, that as yet any formation of pus had taken place—but that; 3d, if a rigor, such as he had the day before, returned, the cranium should be opened to relieve tension, by the evacuation of pus—if it had formed—or of serum. 4th. That the situation where this opening should be made was sufficiently indicated by the extension of the inflammation from the petrous bone, and that the under surface of the temporo-sphenoidal lobe could be reached by trephining at a spot *two inches above aud behind the external auditory meatus.*

The treatment which had been commenced was steadily continued. It consisted in blistering behind the ear; mercury by means of hyd. c. creta, in 2 grain doses, 3 times a day; morphia hydpodermically, to relieve the nightly exacerbations of intense pain—with very light unstimulating food. There was no return of the rigor, and therefore no operation was performed, and the symptoms gradually gave way, so that on the 30th I find the following note: "Patient has not had much pain for the past 2 days; this morning he looked brighter than he has done for many days; appetite fairly good." Before the middle of February he left the Hospital quite free from any brain symptoms.

The diagnosis made in this case seems fully established by the subsequent course of the case. We doubted the existence of an abscess, and his recovery without operation makes the doubt a certainty. We believed there was inflammation of a certain limited portion of brain substance, and the fact that his symptoms gradually disappeared under treatment by mercury, renders the inflammatory nature of the disease almost certain.

I was ready to operate, but am thankful to my colleagues who kindly assisted me, for, strengthened by their opinion coinciding with my own that the existence of pus was not proved, I waited until the treatment by mercury had been fairly used, and the patient's complete recovery makes the case a highly instructive one.

CASE 2.—*Syphilitic Necrosis of Os Frontis; Signs of Cerebral Pressure; Removal of Necrosed Bone, by Trephining; Gummata discovered beneath the Dura Mater and removed with instant Re-*

lief; Partial Recovery; then Hernia Cerebri and death. Case noted by Mr. French.

Ellen Morrison, aged 30, a married woman, was admitted to the Adelaide Hospital in Sept., 1887, under the care of Dr. Wallace Beatty, at that time suffering from sickness of stomach. She left at Christmas, and was readmitted in Feb., 1888, with a swelling on her forehead. Dr. Beatty then asked me to see her, and I advised the swelling to be opened, being convinced that diseased bone lay behind, and further that syphilis was the poison producing all the symptoms; this diagnosis rested on the state of the mucous membrane of the pharynx and upon her skin, which showed the unmistakable spots and ulcers of a tubercular syphilide. The abscess on the forehead being opened, dead bone was found beneath it. As she suffered from headache, worse at night she was placed on 8 gr. doses of iodide of potassium, 3 times a day. with marked benefit. She left Hospital, attending occasionally until May, when she was again admitted this time into the "Brooke" Ward under my care, with the following group of symptoms: On the left side of the forehead there was an ulcer the size of a two-shilling piece, the base of which was formed of necrosed bone of a blackish color, perfectly bare and dry. She seemed to have constant pain in this region, but her naturally bright and intelligent manner was now quite gone, replaced by a dull lethargic manner and a confused and anxious look. When addressed she shook her head and made no reply, but pointed with her left hand to her right, which lay helpless by her side: the paralysis of the right side was not complete, for now and again she moved her leg and arm a little, then seemed to lose all power over that side, and similarly with her speech, usually she made no reply or attempt at speech—but the power returned sometimes, for a few minutes, and she spoke correctly: there was not *Aphasia,* but it seemed as if the power of framing her thoughts into words entirely failed her. Such was her state on the 5th of May,—on the 6th she was rather worse, the fœtid smell noted the day before was very marked about her head; she had taken no food except a little milk, apparently fearing the attempt to swallow. Considering the urgency of the symptoms, and the guide afforded by the necrosis of the

frontal bone, I decided to lose no time, but to open the cranium. Next mornlng, May 7th, the patient had passed a quiet night, had taken a cup of beef-tea early in the morning, had moved her right arm a little, and speech remained same as day before. At 10 A. M., she was placed under the influence of ether, and I proceeded to remove a circle of bone, about the size of a sixpence with a trephine. The bone through which I cut was partially dead. The osseous button being raised, the dura mater was seen to be of a dull yellow color, like wash-leather, and very tense. As there was not sufficient room properly to deal with the parts beneath, another circle of bone was removed, and even then, we had not room and a third was cut out. This gave an opening the size of a two-shilling piece, the bone which I removed being almost entirely necrosed. The tension on the dura mater caused it to bulge out through the opening, and felt with the tips of the fingers it gave a sensation of fluctuation as if it was distended by fluid. A crucial incision was now made through the dura, disclosing not fluid, but the characteristic deposit of a syphilitic gumma, a yellow cheesy, pulpy substance; this I at once began carefully to remove with a small scoop, and as I did so, Dr. Piele who was giving ether, felt the patient's right arm, move repeatedly; a very fœtid smell was perceived by all who stood round the operating table.

It was difficult to remove all the gummatous matter, for it was soft and friable in itself,and was firmly adherent to the walls of the cavity, which it seemed to have hollowed for itself, by growth on the upper surface of the anterior lobe. The mass removed with the scoop when gathered together was the size of a small egg. When no more could be scraped away, the cavity in which it had been contained, was carefully and repeatedly washed out with a weak solution of sublimate 1 in 2,000, a drainage tube was placed in and the flaps of dura mater readjusted, and by a few stitches held in position; over this there was neither bone nor skin, so a light padding of sublimate gauze was placed over, and a bandage kept all neatly in place. The patient was then removed having been one hour in the operation theatre.

May 8th. Her condition was favorable; Temp. 99.8°. She

can move the right arm and leg feebly, but very much better than she could before the operation. Her speech shows a more marked improvement, for she answers clearly all questions, without hesitation or mistake, but there is an unmistakably fœtid odor about her—the same as was experienced yesterday at the operation.

May 9th. Aspect very good; has no pain; wound was opened and dressed, as the fœtid smell continued. The flaps of dura mater were sloughing, but the fœtor seemed to come from the decomposing gummy matter, which still clung to the membranes. After a very complete antiseptic irrigation, the cavity was dressed with charpie well soaked in Condie's solution of permanganate of potash 1 in ten.

May 10th. Patient slept well, feels and looks drowsy; breath foul; no pains in head. When the dressings were removed, the fœtid smell was at once perceived; cavity well washed out, and drainage tube removed; charpie wetted in black wash was laid over the wound.

From this day until the 15th, she seemed just to hold on without any decided advance towards recovery—nor falling back either; upon that day (15th) it was noticed for the first time that there was a protrusion from the opening in the cranium—the protruding substance being cerebral, reddish in color, and very soft. The fact of the syphilitic origin of the case and of the probably inflammatory origin of the swelling of the brain substance, induced me now to make trial of 10 grain inunctions of mercurial ointment daily—more particularly as the irritable state of the bowels prevented the administration of mercury by the mouth.

She improved to a certain extent under this treatment, and during the succeeding fortnight frequently seemed as if she would recover—but towards the end of the month she began to refuse food, to become more drowsy, and upon the 2nd of June she died.

Autopsy (by Dr. H. T. Beuley): "Chief morbid change, acute inflammation of frontal lobe on left side, nearly amounting to abscess: on opening the cranium, the inner surface of the calvarium was found to be quite healthy, except at the seat of the trepan hole, where the inner side of the bone round the

edges was slightly disorganized. The dura mater had lost its characteristic shine, and was roughened for some distance around the trephine hole and was adherent to the brain matter: there was a slight lymphy deposit in and around the fissure of Sylvius, on the left of the wound under the dura mater there was evidence of acute inflammation, the brain matter being broken down almost to a state of abscess."

OBSERVATIONS ON CASE 2.—Cases in which the cranium has been trephined for a syphilitic lesion are as yet rare Syphilis in its later stages produces not only tumors of different degrees of hardness—some being (as in this case) soft, friable and decomposing; others hard, fibrous and firmly adherent—but also, is very apt at the same time to produce inflammatory changes in the membranes, hence a difficulty in deciding upon operation. Certainly a vigorous use of the iodide of potassium, and a cautious use of mercury must always in these cases precede operative interference, and will very generally relieve the symptoms so much as to make such unnecessary. In case 2, neither iodide of potassium nor mercury acted well, nor gave the same relief as is usually experienced. Hence the operation becomes necessary to arrest the advancing hemiplegia and aphasia, but the same insensibility to the beneficial effects of medicinal treatment which may be said to have made the operation a necessity, also rendered the ultimate result fatal, for undoubtedly had I been able to counteract the inflammatory changes which appeared on the 15th of May, my patient would have lived, for the immediate effect of the operation was successful and the autopsy shows that the principal morbid change, and presumably the cause of death, was "acute inflammation of the frontal lobe." I think I am justified in citing this case as a successful removal of a gummatous syphilitic tumor of the cerebrum by operation, and that surgeons may be encouraged to attempt the same under similar circumstances.